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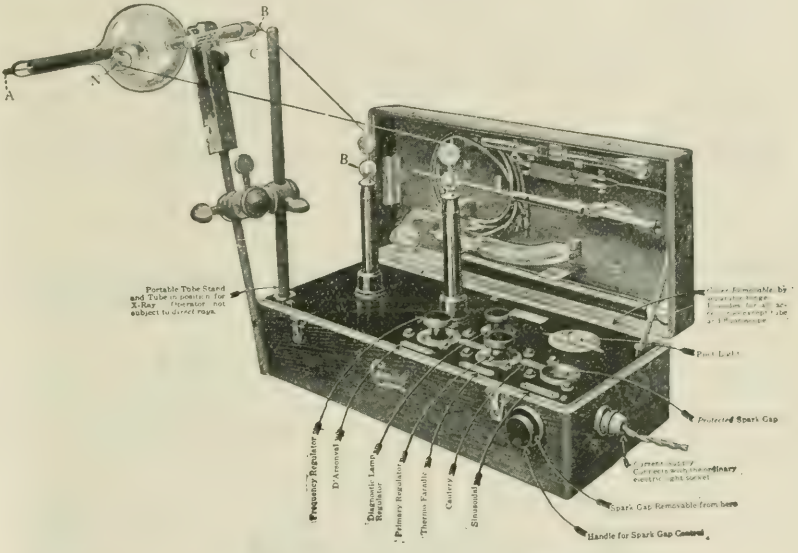

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NASHVILLE JOURNAL
—OF—
MEDICINE AND SURGERY

CHARLES S. BRIGGS, A. M., M. D., Editor

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Original Communications

PRINCIPLES AND METHODS FOR PUPILLARY EXAMINATION IN DAILY PRACTICE.*

By Dr. Otto Schirmer.

(Translated from the New York Medizinische Monatsschrift, by W. T. Briggs, M.D., Nashville, Tenn.)

In order to perfectly understand certain pathological phenomena it seems to me absolutely necessary to make a study of the scientific basis of pupillary examination. Therefore I intend to commence with a few remarks on the anatomy and physiology of pupillary reaction. Today, however, I will confine myself to remarks on the reaction to light and the convergence reaction.

Reaction to light is a reflex phenomena. The centripetal part of the reflex arc begins in the retina. It is generally understood that it begins in the rods and cones. This, however, has not been proven. I myself have for fifteen years made tests in regard to the physiology of this, working on the hypothesis that just as there are special efferent nerves so also are there special receiving organs concerned in the pupillary reflex, that these organs were to be found in the deeper portions of the retina; to be more exact, in the so-called parareticular cells.

*Read before the Deutchen Medizinischen Gesellschaft der Stadt, New York, May 5, 1913.

Since Gudden made his experiments we know perfectly well that the pupillary reflex is not caused by fibres in the optic nerve but in special centripetal nerve fibres. These fibres controlling pupillary reaction partially decussate as they enter the chiasm and then pass still further in; however, not as far as the primary optic ganglia, on the contrary they leave the tract in order to go directly to the pupillary centre. This arrangement is very important, since it enables us to understand blindness in which the pupillary reflex remains undisturbed. Especially important is this arrangement when we wish to locate the lesion in hemianopsia. For instance, if we find a hemianoptic pupillary reaction we locate the lesion in the tract; if, however, the reflex remains undisturbed we know the lesion is in the primary optic ganglia or involves the cortex of the brain.

The pupillary centre is in the nucleus of the oculomotor nerve. It is close beside the nucleus from which the nerve fibres to the sphincter run, which nucleus, according to the researches of Bernheimer, is the small celled, unpaired median nucleus. The centrifugal fibres of the reflex arc run in the oculomotor nerve. They enter the ciliary ganglion, where they spread out in terminal arborizations which surround the ganglion cells. From the latter run the axis cylinders which make up the posterior ciliary nerves and which end in the sphincter.

This description explains how the pupillary reflex depends on the action of only one muscle, the sphincter; the other muscle, the dilatator iridis, has nothing to do with this action.

The convergence reaction is not a reflex phenomena but an association movement. With every convergent movement of the eyes and with each movement of accommodation the pupils contract simultaneously. There has been a controversy as to whether the convergence or accommodation was the more responsible for this. My own opinion is that this question is not to be answered, because the question itself is wrong. It is not at all a question of a separate and distinct innervation of these centres with which our voluntary effort has nothing to do. It is much more a question of a controlling centre, the convergence centre. The nuclei of the nerves to the rectus internus, the accommodation muscle,

and the sphincter, are under control of this centre and thus it happens that at every convergence these three muscles act together.

With the above data the physiology of the pupillary reflex can be understood without further explanation.

Because of the semidecussation of the fibres concerned in pupillary reflex action, it happens that both pupils must always be equally dilated, and that, too, even when one eye is exposed to light while the other is in darkness or when one eye sees while the other is blind. This, however, holds only for routine work. With more exact examination we find that the pupil exposed to light, or the pupil of the good eye—the other being blind—is ¼ to ½mm more contracted.

In order to estimate the dilatation of the pupils, which varies with every change of light, we must observe the physiological law. This law, which I discovered fifteen years ago, is as follows: The dilatation of the pupil is dependent on the ratio of the absolute degree of light to the adaptability of the eye. Adaptation—not to be confused with accommodation—is the ability of the eye to adapt itself so perfectly to different degrees of light that its function is thereby in no way impaired. It depends, so far as we know, on chemical changes in the retina, not on the change of pigment from one part to another brought about by the entrance of light. This adaptation influences the width of the pupil exactly in proportion to the brightness of the light. The same degree of light will at one time cause the pupil to contract and at another time dilate according to the adaptability of the eye. This law holds for all degrees of light from fifty to a thousand meterkerzen (a meterkerze is the brightness of a candle at one meter distance).

These different widths of the pupil in fully adapted eyes, which I have called physiological, shall form the basis of our measurements. Examination of the eye with other illumination, especially strongly reduced illumination, yields very uncertain results. With such a method the individual difference in the rigidity of the iris plays too important a role. The dilatation of the pupils amounts to between 2½ and 4 mm.

Here the examination is conducted in the following way: We place the patient opposite a window and allow him two minutes for adaptation. This illumination is quite sufficient for practical purposes, since an illumination of from fifty to a thousand meter-kerzen always prevails near a window on cloudy as well as bright days. Inspection will show whether the dilatation is normal. Finally, one can use the pupillometer of Haab (a row of black dots of different sizes) for measurement. Whatever is under 2¾ or over 4 mm. is pathological. If the pupils are of different sizes it is not necessarily pathological. A congenital difference is not a rare condition. This difference never amounts to more than 1 mm., does not vary during life and does not influence the pupillary reaction. Greater differences in the pupils always points to a disease of the centrifugal fibres, provided there is no disease of the eye itself. However, a disease of the sympathetic system can not produce this difference. Its diagnosis could hardly ever offer any difficulty, since pupillary changes are never the only symptoms of sympathetic disease, on the contrary we find other signs, such as differences in the palpebral openings, in the secretion of sweat or in the dilatation of the blood vessels on the affected side.

In order to locate lesions in the centripetal fibres we must examine each eye separately while the other eye is covered. In such a case the pupil on the affected side will show a pathological dilatation. We can make good use of these methods; for example, in differentiating a hysterical amaurosis from a blindness due to optic neuritis. The recognition of the latter might prove difficult, as for instance in a very nervous young woman in the very first stages of multiple sclerosis. With an organic lesion of this type, if we make the single eye examination, we find the pupil widely dilated, whereas, in hysterical amaurosis, the pupil is not affected.

Normally, the pupil is round. Often of late has our attention been called to the fact that in tabes the pupil is not round. According to my experience it is true that such variations occur very often in tabetics, but only when the accompanying Argyll-Robertson sign is present; without the latter sign variations do not occur oftener nor are they more pronounced than in normal in-

dividuals. Therein the significance of the sign in the diagnosis of tabes is diminished.

The pupillary reflex is examined to the best advantage in a darkened room. It is more pronounced and easier to see. You have the patient look directly forward and illuminate the eye with different degrees of light from the side with a powerful convex lense. There are great variations in the degree of reflex action. Nevertheless you must not think there is a lesion somewhere in the reflex arc simply because the reaction is weak, if there are no other symptoms. The reaction is especially apt to be diminished in the elderly in whom the iris fibres are rigid. If the reaction is absent in one eye then we are able, by the consensual reaction, to locate the lesion in the centripetal or centrifugal fibres as the case may be. If the reaction is absent, regardless of whether the eye is in shade or illuminated, we have a lesion in the centrifugal fibres. If on the other hand reaction occurs in the other eye, then we know the centripetal fibres are affected.

In order to obtain the convergence reaction, I have the patient look in the distance whereupon both convergence and accommodation are relaxed. Then I hold my finger about 10 cm. before his face between the two eyes and tell him to look at my finger. There should be a contraction which is usually prompt and pronounced. This is very striking, especially in the very greatly contracted pupils of tabetics with the Argyll-Robertson pupil. You often think that the pupils are so contracted that further contraction is impossible and yet on convergence a prompt and pronounced contraction occurs.

Selected Articles

SURGICAL EFFICIENCY.

By J. F. Baldwin, A.M., M.D., Surgeon to Grant Hospital, etc., Columbus, Ohio.

Efficiency is defined by Webster as "economic productivity;" when applied to a machine, human or otherwise, it is "the ratio of the work secured from the machine to the energy put into it." A few years ago Frederick W. Taylor made a scientific study of human efficiency as applied to the mere manual labor of carrying pig iron. He found that a day's work of a muscular laborer consisted in carrying eleven and a half tons of pig iron. By studying the lost motions which were made, and the unnecessary efforts which were put forth, he found that with no more work, and with no more exhaustion at the end of the day's work, the man would carry forty-seven tons a day. In other words, his efficiency has been increased more than 400 per cent.

A little later Gilbreth made a study of the laying of brick. We know that brick have been laid since at least 2,000 years before the birth of Christ. Gilbreth found that 120 bricks per hour was the practical limit of the bricklayer. By studying lost motion and unnecessary effort, he demonstrated that this same bricklayer by no more effort, and with no more exhaustion at the end of the day's work, could easily lay 350 bricks per hour; an increase of 300 per cent. Through forty centuries the bricklayers had made no effort to discover the laws of efficiency.

The study of fatigue as a diseased condition of the body has been undertaken only recently. Ranke was the first to perform notable fatigue experiments. He took an extract from a frog's muscle, that had been exercised until exhausted, and injected it into the blood vessels of a frog that had been at rest. The muscles of the second frog immediately showed great feebleness in contracting. In other words, the frog was thoroughly fatigued.

Some sort of toxin had evidently been passed from the one animal to the other. He then showed that if the exhausted muscle of the frog were washed out by salt solution sent through its vessels, the toxin was removed, and the power of contraction was at once restored.

Ranke's studies have been continued, and now the literature of fatigue is quite voluminous. "It is now customary," says Professor Lee, of Columbia University, "to recognize three distinct metabolic products as fatiguing, namely, sarcolactic acid, monopotassium phosphate, and carbon dioxide." During active labor the glycogen of the muscle cell becomes consumed, and in the consumption is converted into waste products which are toxic, and this accumulation of toxic waste is the poisonous factor in the production of fatigue. A tired man is therefore a poisoned man, and it has been demonstrated that an animal that drops dead in flight, succumbs not to heart failure but to poison, and decomposition occurs under such circumstances with startling rapidity. Not only do muscle cells take part in this process, but also the nerve cells which are brought into activity in the process of the labor.

In the laboratory experiments the muscle can be freed of this toxic product by washing with salt solution as previously stated, but in life this product is eliminated and the glycogen restored only by a period of rest, and if the intervals of rest are properly apportioned the muscle itself could labor on continuously. It was this alternate rest and work that enabled the laborer to carry in a day four times as much pig iron as he had carried before.

For many years organized labor fought to secure by gradual reduction, an eight hour day. This reduction, except with a corresponding reduction in wages, was bitterly fought by employers; and yet recent investigations very carefully conducted have shown that in work requiring particularly muscular exertion, the laborer can do in eight hours a little more work than he previously did in nine. Indeed, at Liege, Belgium, in the sulphuric acid works, the original system was a twenty-four hour shift. Each man worked twenty-four hours, then rested twenty-four hours, during which interval he frequently got drunk. This system was aban-

doned and a twelve-hour shift introduced. A little later this was changed to three shifts of eight hours each, and a few months after, when the workmen had become adjusted to these conditions, careful experiments were made by Mr. Fromont, the manager of the plant, and his report then confirmed by Professor Mahaim, of the University of Liege. This report showed that in the eight-hour day, representing seven and a half hours of actual work, the same workmen, at the same ovens, with the same implements, and with the same raw materials, produced as much as previously in twelve hours, representing ten hours of actual work. By thus having three shifts of men instead of two, the income on the capital invested in the plant was increased 50 per cent.

Mahr and Platt, owners of the Salford Iron Works, at Manchester, England, voluntarily reduced as an experiment their work weeks from 53 hours to 48. At the end of their first year they found that their output per week per man had been increased. Acting on this discovery, the British Government reduced its work per week to 48 hours for 43,000 of its own employes. Says Dr. Mather: "We seem to have been working in harmony with the natural law instead of against it. The most economical production seems to be obtained by employing men only so long as they are at their best. When this stage has passed there is no true economy in their continued work."

This change for the better is also shown in another way. Under the twelve-hour work day the sick benefit paid out from the Mutual Sickness Insurance Fund exceeded the receipts, and there was an annual deficit. Under the eight-hour system the fund became solvent with a balance in the treasury.

Mr. William Crawford, of Buffalo, president of a company making monuments, according to his testimony before a committee of the House of Representatives, stated that for thirty-two years they had been keeping a careful cost-record of each piece of work. They had a ten-hour day when they commenced keeping this record. This was reduced to nine hours, and they found that under the same identical conditions the same man accomplished more work in nine hours than he had previously done in ten, and later when the hours were reduced to eight, this same

man accomplished still more in an eight-hour day than he had done in a nine-hour day. He then suggests, after watching his men, that a good granite cutter, who will use his brains as well as his hands, can do just as much work in seven hours as in eight.

Many other lines of industry have made similar reports, the least increase, as would naturally be expected, being found in those industries in which the muscular labor is of the least exhausting type.

A surgical operation is in a sense as much a mechanical procedure as loading a ton of pig iron, or building a brick wall. The surgeon does not become "fatigued" in the same sense as does the day laborer, but his fatigue comes from exhaustion of the nerve cells, though, of course, after several hours of hard work he may suffer from real muscular fatigue as well; hence the importance with him, as with the laborer carrying pig iron, of securing rest between operations when that is possible. The tired surgeon is not apt to be at his best in efficiency.

A story is going the rounds to the effect that one of these efficiency experts recently watched a surgical operation conducted by one of the best known Baltimore surgeons. At the completion of the operation he was asked what he thought of the procedure, and his reply was that if the surgeon were in his employ as a mechanic he would not hold his job a week. A hundred times, the expert said, he had picked up an instrument and laid it down without using it. Here were a hundred false motions, with nothing accomplished, and with a distinct loss of time and muscular effort.

That most surgeons who take from one to three or four hours to make an abdominal operation consume most of this time because of mechanical inefficiency, is probably a pretty safe statement to make. An ordinary supra-vaginal hysterectomy with removal of the appendages, and implantation into the stump of the ligaments, with careful overcasting of the peritoneum, removal of the appendix, and examination of the other abdominal viscera, should not consume more than thirty or thirty-five minutes, and a large part of that time would be consumed in careful closure of the abdomen. An ordinary operation for the removal of the

appendix, when the operation is made in the interval or in the early stages of an acute attack, should not consume over ten minutes. Plastic operations, requiring careful adjustment and the introduction of many stitches, will necessarily take more time, but even those operations should not be particularly tedious.

The inefficient operator is apt to make his abdominal incision very cautionsly, and with short cuts—about as he learned to do his work in the dissecting room. Each little bleeding point is seized with a hemostat, and he probably takes time to apply a ligature. Such an operator usually takes ten to fifteen minutes to open the abdomen. He then commences his intra-abdominal work. He separates a few adhesions at one point, then jumps over to the other side, does a little work there, and then back again; and so back and forth, and here and there, he fritters away many precious moments. Here, as on the outside, every bit of tissue is carefully caught with hemostats and ligatures used. Such an operator is very apt to have his ligatures cut by the nurse two or three times too long. The long ends are in his way, snarl on his fingers, and require a number of additional movements to secure satisfactory ligation. (If one will watch a seamstress at her work he will notice that she uses a short thread, since she has learned that it takes less time to thread additional needles than it does to carry her hand holding the needle so far away from her work.) The operation having been finally completed in this haphazard way, the incision is closed. Usually the operator will be more systematic in his closure of the incision than elsewhere, but even here there are apt to be very many false motions.

On the contrary, the efficient surgeon makes no false motions. He has developed a certain system about each operation, and he proceeds in an orderly manner, commencing at one point and completing his work there before he goes to another. Every motion counts. He never makes two snips with the scissors if one snip will do. With a sponge in his fingers he pushes off extensive adhesions instead of dissecting them loose with many snips of his scissors. One broad sweep separates the parts widely, and with a minimum of traumatism and hemorrhage. He does not

deem it wise during his operation to talk with visitors, or to discuss the pathology of the case, or to seek advice as to treatment from his assistants, or, as I have known in some instances, from the nurses. Little oozing points are ignored entirely, unless the case is one in which it is of prime importance to conserve bleeding, or are caught for a minute or two with a hemostat. No ligatures are applied, as a rule, except to vessels that are large enough to have a local habitation and a name. A rapid survey is made of the entire abdomen to see if there are any other pathological processes going on, and the incision is then closed systematically and rapidly, so as to secure firm apposition of the incised tissues.

In ligating a vessel the ligature should be no longer than enables the operator to secure a firm hold. After making a tight, firm turn, tension should be maintained on the ends while the second turn of the reef knot is being made, and this tension should still be maintained until this second turn is firmly in place. If this is done there will be no loosening of the ligature, and there is no necessity of a third knot if ordinary suture material is used. It occasionally happens that after the first turn is made a bit of tissue drops over the ligature. In that case it will usually be better to bring the second turn down without stopping to get this tissue out of the way, and then a third turn should be made so as to have a complete reef knot. If tension is not maintained upon the ends of the ligature while making the second turn, there is apt to be a little slipping of the first turn, and hence a loose ligature, with secondary hemorrhage.

I have spoken above of unnecessary ligatures. This reminds me that in all the textbooks on abdominal surgery with which I am familiar, in both illustration and text, the writer directs us, in making an abdominal hysterectomy, to carefully ligate or clamp the round ligaments before cutting it from the uterus. Dr. Lee's Obstetrics, which is the latest publication along these lines, gives us these same directions. As a matter of fact, however, the artery in the round ligament runs from the uterus, and all the bleeding that comes when that is severed comes from the stump attached to the uterus. I have made thousands of hysterectomies, but in cutting down along the side of the uterus I cut through the

round ligament with absolute impunity. It never bleeds beyond a few drops of venous blood which occasionally escape immediately after the cutting. I have been calling attention to this in my clinical work for a good many years. It seems curious that the blunder should be transmitted from textbook to textbook.

Prompt recognition of certain surgical conditions, with advice as to equally prompt intervention, is characteristic of efficient surgery. An osteo-myelitis that is recognized at the onset and at once opened and drained, produces a minimum of destruction; but in some of these cases the entire shaft of the bone may be destroyed in forty-eight or seventy-two hours. To be sure, these cases are almost invariably seen at the outset by the physician rather than the surgeon, and I am sorry to say that nearly all of them are treated for several days, and sometimes for several weeks as "rheumatism," with the administration of salicylates internally, and with local applications according to the whims of the attending physician. I have known of several instances, however, in which men posing as surgeons have made the same blunder. The mistake should not be made. The sudden onset of symptoms, the severe chill, high temperature, great pain, and the fact that the trouble is not in the joint but simply close to it, ought to enable the diagnosis to be arrived at promptly, and proper treatment instituted with equal promptness.

An acute salpingitis, whether due to the infection of Neisser, or the result of an abortion or careless curetting, should also be recognized promptly and treated with equal promptness. We know that in an uncertain number of cases a Neisserian infection, or one of the other infections, may subside, leaving the tubes patent and functionating; but those cases are the exception. Sterility nearly always follows, while in a large proportion of cases neglected, treatment results in tubo-ovarian abscesses requiring ultimately removal of all the appendages. Early operation will remove the disease before the ovaries are involved, and thus save the ovaries and at the same time greatly diminish the morbidity, without, in my judgment, any increase, but rather a diminution, in mortality.

A number of years ago an Eastern gynecologist wrote an article in which he advocated treating all of those cases by rest until the acute symptoms subsided, and then operating two or three months later, when there was an entire absence of febrile reaction. He claimed that this treatment resulted in a greatly diminished mortality. His statements were extensively copied, and are now contained in very many of our textbooks. The teaching, however, I regard as entirely erroneous. I followed that teaching for a while, until satisfield that I was making a mistake, and then changed to prompt intervention, with greatly improved results. Early operation gives us no adhesions, or if any, very light, the tubes are readily removed and the ovaries are saved. A smear of pus is frequently present which can be wiped off, and the surface treated with dilute iodine; then to keep the intestines out of the cul-de-sac a gauze fluff can be introduced to be removed through a vaginal opening, and thus the field is protected and healing takes place promptly. This use of the fluff, both for its mechanical effect, and incidentally for drainage, I advised in a paper read before the American Association of Obstetricians and Gynecologists, in 1909.

Tincture of iodine, I think, should be used pretty freely in treating abdominal conditions in which infection is present. Two or three years ago, a writer, who had had a case of post-operative ileus, reported his case as one in which the ileus was due in his judgment to the use of iodine which had been applied on the skin, and which in some way he thought had reached the peritoneal covering of the intestine. He had evidently generalized from a single case, and that an exceedingly uncertain one. We know that post-operative ileus will occur from time to time in the practice of any surgeon, but least frequently in the practice of one who is most careful to cover all raw surfaces. Unless this accident should be found to occur most frequently in the practice of men using iodine, to attribute it to the iodine would be entirely illogical. For several years I have been using iodine freely over the abdomen in all of my abdominal cases, and I have also used it in the pelvis freely when the source of infection was there, in and around appendiceal abscesses, and in the immediate field of

operation in making gastro-enterostomies, and entero-enterostomies. Several of my assistants have been using it with equal freedom in their work. The records of this use would certainly cover several thousand cases, but thus far I have had no instances of post-operative ileus. The danger, therefore, if not absolutely mythical is certainly negligible.

The object of the efficient surgeon is to cure his patient. He will not accomplish this in many cases if he simply removes a chronically inflamed appendix, or an ovarian cyst, or enucleates a fibroid. Many of the patient's symptoms may come from more or less marked pelvic adhesions, retroversion, or a tendency to prolapse. Under those circumstances, in addition to performing the main operation which he contemplated, he should correct so far as possible all the pathology that is present, or at least all that he can without jeopardizing the patient's convalescence. For these reasons, when he finds in his preliminary examinations that there is some pelvic pathology, at least in the way of retroversion, he should make a median incision for the removal of the inflamed appendix, and then through this incision separate adhesions and shorten the ligaments by the method of Gilliam or Baldy, or by any other method which he may prefer.

In the removal of infected tubes it is a little easier to ligate the tube and remove it a half inch or an inch from the horn of the uterus; but that method leaves an infected stump which will almost invariably interfere with convalescence, and leave the patient still an invalid. The efficient surgeon will remove the tube well into the horn of the uterus so as to take it completely away. If the uterus itself is the seat of hyperplasia, and not likely to undergo normal involution, it will be well in cases in which both tubes are removed, so that there will be no possibility of pregnancy, to remove the uterus also. When, however, the uterus is not thus diseased, and the patient is young, its preservation, together with the ovaries, will maintain menstruation, and keep the patient mentally, and probably physically, in better condition.

With our present knowledge of the frequency with which decaying teeth are a source of constitutional infection, all such teeth should as a rule be extracted while the nurses are putting on the

dressings, preserving, of course, those that can be treated by the dentist. Since Keen and others have shown the frequency with which warts and moles become malignant, these, I think, should also be removed if the condition of the patient justifies it. The writer has had many a patient really more grateful for the removal of unsightly moles, and the extraction of old teeth, than for the removal of her fibroid or gallstones.

I wish it to be distinctly understood that nothing which I have written above is to be construed into any excuse for slap-dash surgery. The efficient operator's movements may seem very deliberate, but the time of operation is short because he does not make a single false movement. The operator who makes a great display of apparent haste in his operation is very apt to find that "the more haste the less speed," and while he may keep the operating room in an uproar, the time which he consumes is lengthened and the risk to his patient greatly increased. Such haste usually means slovenly surgery, while efficient surgery means perfect surgery.—*Lancet-Clinic.*

Extracts from Home and Foreign Journals.

SURGICAL

Local Anaesthesia by the Infiltration Method.

O. S. Fowler, of Denver, has presented a careful discussion of this subject in the *Denver Med. Times* for January, 1913. After discussing the history of local anæsthesia and its indications, he takes up the various methods of administration, including the infiltration and intravenous methods. His success following these means of local anæsthetization has been so marked that he has given this form a wide range of usage. He says, "I am sure that the lack of a more general adoption (of local anæsthesia) is due to the fact that too many physicians are not thoroughly conversant with its application in major surgery, or are simply prejudiced against it, and do not perfect themselves in its technique. I am glad to know that the nose, throat and eye men are using it much more regularly and with uniformly good results and satisfaction. The choice of the anæsthetic is wholly a personal question. Cocain has been the sheet anchor for many years, but it is undoubtedly more dangerous than novocain or quinine and urea. Novocain is reputed to have only one-seventh the toxicity of cocain. Personally I use novocain entirely in ½ to ¼ per cent solutions with 9 drops of adrenalin, 1-1000 to each 100 c.c., and find that this answers every demand. If I do not get perfect anæsthesia, I feel the fault is mine in the administration and not the fault of the drug." Dr. Fowler has successfully used novocain in over 200 cases which include 33 herniotomies, appendectomies, suprapubic cystotomies, removal of large lipomata, and orchidectomies, etc.—*The Lancet-Clinic.*

Arteriovenous Anasto-mosis for Impending Gangrene.

This operation was performed by Goodman in fifteen cases on the femoral vessels, and in this series he noted that the foot, previously cold and cadaverous in appearance, took on a feeling of warmth and a healthy pink color. The valves of the veins were only a temporary barrier to the course of the blood against the constant pounding of the heart. The pain due to ischemia was relieved shortly after the operation in all these cases. Strongly presumptive evidence of establishing a reversal of the circulation are the following facts: improvement of color, increase of warmth of the affected part, relief from pain, filling of the superficial veins, pulsation of veins below site of anastomosis, and return of part threatened with gangrene, or the actual seat of gangrene, to the normal.

Goodman had six successes. Several of these cases which promises success required amputation later, but even these had temporary relief from pain. He used the end-to-end method in all excepting one case, as he found it the simplest in execution and least likely to cause thrombosis. The operation should not be undertaken in the presence of sepsis, advanced or fulminating gangrene. The opportune time for intervention is in the pregangrenous stage before mortification has set in, in order to prevent its inception. In nonseptic gangrene the improved nutrition of the limb may be hoped for, permitting lower amputation than would otherwise be possible. The utmost delicacy and skill in minute detail must be observed in order to avoid the formation of thrombi; a most rigid asepsis is required throughout the operation, or the object of the operation will be defeated. Goodman made thirteen end-to-end anastomoses, one side-to-side, and in two of the cases an exposure of the vessel showed that an attempt to anastomose was not warranted, on account of the advanced stage of thrombosis of the vessels. In two cases with gangrene a low amputation seemed to be satisfactory. Of the eight cases which were failures, including one death, one was a side-to-side anastomosis, and three of the remainder should not have been op-

erated on on account of the presence of spreading gangrene.—*The Journal of the Am. Med. Assn.*

Scopolamine-Morphine-Atropine as an Adjunct in Inhalation Anaesthesia.

Marcom, in the *Proceedings of the Royal Society of Medicine* for April, 1913, asserts that the advantages of a preliminary injection of scopolamine-morphine-atropine as an aid to a general anæsthetic are manifold. The drowsy condition into which the patient generally falls frequently enables the anæsthetic to be administered without the patient waking up. This seems to be particularly the case in highly nervous patients—a very satisfactory point, as it is these patients who feel most acutely the preliminaries of the anæsthetic. In this connection it should be mentioned that the initial administration of ether is sometimes liable to awaken the patient, owing to its irritation of the bronchial passages, so that it is best to commence the induction with some less irritating anæsthetic. Personally, Marcom states he always uses the ordinary chloroform-ether mixture, and then continues with open ether when the patient begins to go under. If this is done the initial stage of induction is almost ideal; the patients are absolutely tranquil; there is no struggling or excitement; the respiration is deep and regular, and the pulse is full and slow. It is found that much less anæsthetic is required to obtain surgical anæsthesia, and this is certainly very marked in the case of open ether. Nicholson, in 1909, estimated this reduction at 50 per cent.

When anæsthesia has been obtained the pupils remain contracted and react faintly to light, the corneal reflex being hardly ever lost. This latter fact may render it difficult to judge when a sufficient degree of anæsthesia has been reached, but a good idea can be obtained by paying careful attention to all details, such as the condition of the respiration. The action of the atropine is noticeable owing to the fact that there is great diminution in the amount of the bronchial and salivary secretions, so that it is not

necessary continually to clear out the mucus from the pharynx during the administration, and there is less tendency to post-operative bronchitis pneumonia. Indeed, Marcum asserts he does not recollect a single case of either of these complications arising in patients treated in this way. A number of surgeons have stated that it is impossible to obtain thorough relaxation of the abdominal muscles when scopolamine-morphine-atropine has been employed, but Marcum thinks this is the exception rather than the rule. It is in some cases due to the small amount of anæsthetic employed, but very occasionally cases do arise in which it appears impossible to overcome this rigidity. He has been impressed by the fact that this rigidity is very rarely a prominent feature in abdominal operations, gynecological or otherwise, where the entrance into the peritoneal cavity is effected below the level of the umbilicus, and most of the cases in which it does occur are those in which operations are performed in the epigastric region, in which situation the recti show greater development.

After the operation the patient, almost without exception, sleeps uninterruptedly for three hours or more, and this may be considered the most advantageous fact in this connection, as it does away to a great extent with post-operative shock, and also with the post-anæsthetic vomiting, which is so often such a distressing feature. Felix Rood in the *British Medical Journal* of September 23, 1911, in a report on 400 cases, states that in 255 there was no vomiting, 120 vomited once or twice, and 25 did so several times. At St. Thomas' Hospital, however, the diminution in number of cases of post-anæsthetic vomiting has been even more marked than this, and the Sister of one of the female surgical wards reports that out of fifty consecutive operation cases so treated not one case of post-anæsthetic vomiting occurred. This treatment has been found so satisfactory in the gynecological ward at St. Thomas's that all operation cases have the preliminary injection as a matter of routine. The small proportion of cases in this ward that have post-anæsthetic vomiting may be gauged from the fact that of the last 127 cases operated upon there only six have vomited; of these six, four vomited only once, and then only slightly, two were considerably affected for twenty-four hours after op-

eration, but one of these latter was an acute case, and the preliminary injection was administered only ten minutes before commencement of the operation. It should be mentioned that in this series the anæsthetics were administered by different individuals, ranging from the senior visiting anæsthetist to the most junior house officers.

A point that is frequently raised by critics of the scopolamine-morphine-atropine injection is that it greatly increases flatulence and constipation following operation, but the atropine tends to counteract the effect of the morphine, and Marcom's experience is that the patients do not have, as a general rule, any more trouble in this direction than those who have not had the preliminary injection. The dryness of the mouth, caused by the atropine, is sometimes complained of by the patients, but generally proves to be a minor trouble, and can be rectified by frequently washing out the mouth with water.

In conclusion, Marcom states that roughly 600 surgical cases pass through his hands each year, of all of whom he has the personal care, both before and after operation. Of this number, 40 per cent have a preliminary injection of scopolamine-morphine-atropine, and it is his honest conviction that these latter have a much better time in every way than those who are not so treated. —*The Therapeutic Gazette.*

A Note on the Treatment of Erysipelas by Buttermilk.

Arnold makes a remarkable communication to the *Practitioner* for May, 1913, on this subject. He well says that no medical man with any large experience of erysipelas is likely to express unqualified satisfaction with any of the traditional methods of treating the disease. The multiplicity of the remedies suggested is strongly suggestive of a lack of therapeutic power in, at any rate, the majority, and goes far toward relegating it to the class of *opprobia medicorum.* In these circumstances a paper such as that of Dr. Lawrance in the March number of the *Practitioner,* on

the treatment of iron, is likely to be read with a good deal of interest and to lead to a thorough trial of the method.

For many years past Arnold has used, in the treatment of erysipelas, a simple remedy which he believes to be as certain and even more rapid in its abortive action on erysipelas than the salicylate of iron as described by Dr. Lawrance. The remedy is buttermilk, which he orders to be applied on soft rags—buttercloth is excellent for the purpose, which are kept constantly wet with the remedy.

About seventeen years ago he had under treatment a girl of 19, suffering from erysipelas of the face and scalp. She was ill for several weeks, and had a great deal of pain, frequent relapses, and so on, but eventually recovered, and he sent her to the seaside to recruit. While there she very much overtaxed her strength by a long walk, and came home in a condition of exhaustion. The next day the erysipelas was back again in the face and scalp, the temperature ran rapidly up to 104°, and she suffered very severe pain. While waiting for the arrival of medical help a friend suggested that some buttermilk should be procured and applied freely, saying that she had heard a farmer's wife say that buttermilk was a splendid remedy in erysipelas.

The suggestion was followed; so buttermilk was got and rags soaked in it were applied to the inflamed surface. The pain was immediately relieved and quickly removed altogether. The temperature remaining high, however, it was suggested that, in addition to the local application, she should drink buttermilk. She did so, with the result that the temperature dropped almost at once from 104° to 99°. The inflammation very rapidly subsided, and the patient was practically well the next day. On returning from the seaside, the patient came to see Arnold, and gave him a clear account of the whole experience. The evidence seemed good enough to justify a trial of buttermilk in any subsequent case.

The opportunity occurred in a case of facial erysipelas in a man, who had had a severe and obstinate attack about two years previously. There was an extensive inflammation, with high temperature and great pain, when Arnold was called in. He or-

dered buttermilk to be applied freely and continuously. The spread of the inflammation, which had been rapid up to that time, was immediately checked and the pain entirely relieved. The whole morbid process was aborted, and the next day the patient was practically well.

He does not think that he need give other cases in detail, but further states that since that time—some seventeen years ago—he has treated every case of erysipelas has has had to deal with by this method. The application must be very free, the cloths not being allowed to dry, but being kept constantly wet with the buttermilk. This method has given him quite uniform results; the spread of the inflammation is immediately checked on the application of the buttermilk, whatever the stage of the erysipelas; the pain disappears, and the whole morbid process rapidly aborts.

Arnold asserts he can find no allusion to this method of treating erysipelas in the Medical Digest, and he has not met any medical man who was acquainted with it, though it would appear to be an old country remedy, as, since first learning of it, he has found that it is fairly widely known to farmers and their wives. An interesting question well worthy of investigation is whether the undoubted abortive power of the buttermilk is due to the presence of beneficent microörganisms therein, to the antiseptic action of its lactic acid, or, perhaps, to the two combined.—*The Therapeutic Gazette.*

How to Make and Apply a Poultice.

When a poultice is applied directly to the skin it must be allowed to become a little cool before the patient can bear it, and thus half of its advantage is lost. In order to relieve spasm, as in colic—intestinal, biliary or renal—to relieve inflammation of the pleura, the lungs, the liver and the other organs, we want to apply the poultice as hot as possible, while we protect the skin from being scalded.

In order to do this, especially when a linseed-meal poultice is used, a flannel bag should be prepared (a convenient size being

12 inches by 8 inches). This should be closed at three edges and open at the fourth; one side of it should be about one inch or one and one-half inch longer than the other. It is convenient also to have four tapes attached to the points which form the corners when the bag is closed, in order to keep the poultice in position. Besides this another strip of flannel should be prepared, the same breadth as the length of the bag and long enough to wrap around it once or oftener.

Cracked linseed, bowl and spoon should then be got together, and the spoon and bowl thoroughly heated by means of boiling water. The poultice should then be made with fully boiling water, and rather soft. As soon as it is ready it should be poured into the bag, previously warmed by holding it to the fire; the flap which is formed by the longest side of the bag should now be turned down and fastened in place by a few long stitches with a needle and thread. It should then be quickly wrapped in the strip of flannel and fastened. It may be covered outside with a sheet of cotton-wool.

In this way the poultice may be applied boiling hot to the skin without burning.—*The Medical Brief.*

The Effect of Thyroid Extract on the Blood Pressure and Isolated Heart.

The author experimented on dogs, into the veins of the neck of which he injected the extract of the healthy thyroid and toxic extracts of exophthalmic goiters, in doses of 0.5 of extract for each KG. The experiments on the isolated hearts were done with the apparatus of Borscharow in solutions of the extract of 1 in 500. He came to the following conclusions: The extract of the thyroid produces lowering of the blood pressure in most cases. It produces an increase in the height of the peripheral pulse and also the rate of the pulse. The reduction of the blood pressure is dependent in a large measure upon the diminution of the tonus of the vessels and dilation of the peripheral vessels. On the iso-

lated heart the extract of the thyroid increases the pulse rate in most cases and increases the height of the pulse wave. The degree of the effect of the extract upon the blood pressure can be brought into relation clinically with height of the pulse wave. The degree of the effect of the extract of the healthy thyroid on the blood pressure of animals into the abdominal cavity of which a thyroid enucleated from a diseased animal was introduced give rise to the opinion of an increased sensibility to thyroid toxins. The condition resulting reminds one of the appearance of anaphylaxis. This probably explains the effect of even small doses of thyroid extracts on patients suffering with toxic goiter.

J. F. Percy, of Galesburg, Illinois, in a paper read before the last meeting of the A. M. A., spoke of the good effect of thyroid extracts in preparing patients, the subjects of high pressure, for operations. He stated that the results were practically uniform, in that a decided reduction of pressure was obtained. The writer (abstractor) has tried this on five cases, all of intestitial nephritis and with blood pressure above 210 in each instance, and has seen very marked effects in each instance. In view of our handicap in the treatment of this condition the subject would seem to be of more than passing importance.—*New Orleans Medical and Surgical Journal.*

Treatment of Gonorrheal Orchitis.

The classical treatment in cases of gonorrhœal orchitis is purely local: immobilisation of the testicle by means of a suspensory or T bandage, the local application of compresses dipped in cold water and even an ice bag separated from the scrotum by a layer of lint. To relieve the pain Professor Chauffard recommends the administration by the mouth of salicylate of soda (a drachm or so a day(the inunction, locally, three times a day of the following ointment: Guaiacol 5 parts; vaseline 30 parts; very hot enemata, belladonna or hyoscyamus suppositories and injections of morphine.

It is important to suspend the use of lavages, instillations, etc., throughout the acute stage. Lastly, of recent times, surgical treatment has been employed (Baermann, Escat, Bazet) either in the form of incision or puncture under the following conditions: (Lance): 1° grave forms of acute epididymitis, either on account of the severity of the pain or the intensity of the constitutional symptoms; 2° big indurations of acute recurring epididymitis and, 3° old standing very painful fibrous nodules.

Puncture is a simple little operation unattended by any danger and may be useful in recent cases with intense inflammatory phenomena. It can always be tried in severe cases. For the big nodules of recurring epididymitis it may be proposed as a substitute for incision when the latter is refused by the patient (Juliusburg).

Incision is only resorted to in grave cases with phlegmonous or severe toxic symptoms and in cases of recurring epididymitis without fresh urethral infection, and, lastly, in presence of very old standing epididymal nodules which are the seat of pain.

The constitutional treatment of orchitis comprises the following measures: absolute rest in bed, aperients, a lacto-vegetarian regimen, daily tepid baths and the balsams in small doses.

In the course of a fortnight the patient may be allowed to leave his bed and get about a little, wearing the Horand suspensory bandage. To promote absorption of the orchitis, iodine or iodine ointment, sitz baths, repeated massage of the epididymis and cord.—*Le Monde Medical.*

Multiple Spinal Tumors Removed by Operation in Recklinghausen's Disease.

The patient, a healthy man of twenty years, began to complain of stiffness and weakness of his leg when 17, and a year later had some difficulty in passing urine. When examined first he had marked spastic paralysis of both legs and of the lower part of the abdominal muscles, with increased knee-jerks, ankle clonus and extensor responses, but no sensory changes. Lumbar puncture

gave a yellowish fluid which coagulated spontaneously and contained from 3 to 4.6 per cent of albumin.

Numerous small subcutaneous nodules were found on his trunk and limbs, which appeared about the same time as his legs were first affected; several were excised and found to be neuromata.

About a year after the first was seen a partial anæsthesia had developed on his lower limbs and up to the level of his umbilicus which increased in intensity gradually. The diagnosis of a spinal tumor was now made, and on laminectomy three tumors of considerable size were found lying on the dorsal surface of the cord and easily removed. Their structure was similar to that of the subcutaneous tumors; they were neurofibromata growing from the spinal roots. The patient recovered rapidly; he was able to walk within two months and next year was fit for his ordinary work.

The importance of the yellow discoloration of and high albumin content in the cerebrospinal fluid is often found with cerebral tumors and may be a valuable diagnostic sign—*The Post-Graduate*

Hyperthermic Treatment of Gonorrhoea.

Majors L. W. Harrison and G. J. Houghton (*Journal of the Royal Army Med. Corps,* February, 1913) state that the gonococcus can not resist a temperature of 104 F. for six hours, while the urethra can stand a temperature of 114-119 or even 122. They call attention to a fact often observed by clinicians but little known in literature, that gonorrhœa frequently subsides spontaneously during high fever or other cause, as typhoid. They apply heat to the urethra by a double catheter, the outer closed except for an outlet near the external end, the inner tube carrying a current of hot water. Treatments occupy half an hour. They report sixteen cases, successfully treated in 4-11 days, without complications.—*Buffalo Medical Journal.*

MEDICAL

Strychnin in Heart Failure.

An inquiry was undertaken by Parkinson and Rowlands to obtain evidence as to its immediate effect when given subcutaneously in cases of severe heart failure. The blood pressure, rate and regularity of pulse, rate of respiration and general condition were recorded for an hour after each injection. The action of repeated doses was not investigated. Fifty patients were examined on admission and approved if they presented symptoms and signs of severe heart failure with or without valvular disease; those with heart failure secondary to pulmonary or renal disease were excluded, as were those with pyrexia. Most of the patients showed orthopnea and edema of the legs; all had shortness of breath. Strychnin sulphate in a dose of one-fifteenth of a grain (1-15 gr. =0.0044 gm.) was given subcutaneously in each experiment. Before any observations were made the patient was allowed to remain quietly at rest in bed for three to eight hours, and during this period no drugs were administered. After the injection, records were made at the end of each period of five minutes during one hour. In cases with regular rhythm on no occasion was any increase in blood pressure produced. The average rate of the pulse before injection was 107.6, and after injection 104.0, a slight decrease of 3.3 beats per minute. The authors ascribe this fall to the same factors as mentioned above under blood pressure.

The rate of respiration was unaffected by strychnin. No change in amplitude of respiratory movement was noted. In four cases out of the twenty-five Cheyne-Stokes breathing was recorded on this abnormal respiratory rhythm. In twenty-five cases with auricular fibrillation the average rate of the pulse decreased by only 3.4 beats per minute in the hour following the injection. None presented any change in irregularity. The average rate of respiration showed a decrease of not more than one or two respirations per minute alike after strychnin and after pure water.

No change was observed in the amplitude of respiratory movements. In one case Cheyne-Stokes respiration was recorded; this remained unaffected by the injection. The authors conclude that strychnin has no effect which justifies its employment as a rapid cardiac stimulant in cases of heart failure.—*The Journal of the Am. Med. Assn.*

Dr. Pitzer's Pills.

Burnett, in the *Physicians' Drug News,* gives the following formula of the late Dr. Geo. C. Pitzer's pill, which is a very important remedy:

Extract colocynth comp.	℥xij.
Ext. belladonna	℥j.
Ext. nux vomica	℥iv.
Podophyllin	℥ij.

Mix and make six thousand pills.

Regarding this pill Dr. Pitzer said: "People have learned to rely upon those pills and say they remove biliousness, overcome constipation and always move the bowels gently without exciting pain."

Could Pitzer's formula be put up in a fluid form, both plain and palatable, that would not precipitate? asks Dr. Burnett. If so, how? I would like to know more than one palatable formula, if possible, as often a physician wishes to continue a medicine without the patient knowing it. I really desire a way of fixing Pitzer's formula in fluid form that will not require any pharmaceutical apparatus, simply a way the dispensing physician can follow out.

Dr. Geo. C. Pitzer was a noted eclectic physician, author of a book on suggestion and one on electro-therapeutics and was professor of the practice of medicine in the American Medical College of St. Louis for twenty-five years. He died a few years ago

in Los Angeles, Cal. I consider Dr. Pitzer's formula one of great value. I was licensed to practice medicine December 16, 1902, and in over ten years' experience I have found that biliousness, torpid liver, coated tongue, etc., is the most common condition a physician meets in this locality, either alone or in connection with other conditions.—*The Medical Brief.*

Alcohol in Medicine.

Professor Ewald, of Berlin, has recently taken the position that alcohol no longer occupies a place of usefulness in the treatment of disease, except for certain external conditions. He says that the value of alcohol in infectious diseases has not been proved, and that it actually diminishes natural resistance. In his clinic, alcohol is administered only in severe collapse, or as a means of euthanasia. "It is probable," comments the *Boston Medical and Surgical Journal,* "that the next fifty years will see a gradual increase of this reaction, already rooted in the practice of most progressive physicians, against the indiscriminate use of alcohol.—*The Medical Fortnightly.*

The Treatment of Pernicious Anemia.

Bramwell (*British Med. Jour.,* 1913, 2734, 1993) reports the results in 11 cases of undoubted pernicious anemia and in 1 doubtful case treated by salvarsan. Of the 11 undoubted cases 4 have been apparently completely cured, but it is impossible to say whether a relapse will occur later or not. In 2 cases there was very striking temporary improvement, but ultimately they relapsed and death resulted. In 1 case there was slight improvement at first, but the patient died from broncho-pneumonia while under treatment. In 2 cases there was no improvement, and in 1

case still under treatment there is slight improvement. Bramwell has had nearly 40 years' experience with the ordinary arsenical method of treatment of pernicious anemia, and he believes that the salvarsan treatment is superior to the ordinary arsenical treatment. Further experience is necessary, however, before one can say whether the beneficial effects, which it undoubtedly produces in many cases, will be lasting or merely temporary. Bramwell has always given the salvarsan intramuscularly, the dose used being 0.3 gram, which is half the dose usually employed in syphilis. In view of the fact that pain and inflammation often follow intramuscular injections of salvarsan, he advises neosalvarsan, which does not produce such marked local reactions.—*New Orleans Medical and Surgical Journal.*

A Rapid Clinical Method for the Estimation of Urea in Urine.

The method consists in incubating a portion of urine with an aqueous extract of soy bean flour, all the urea being thereby transformed into ammonium carbonate through the action of an enzyme existing in the soy bean. To prepare the extract, 25 gms. of soy bean powder are mixed with 250 cc. of distilled water and allowed to stand an hour. 25 cc N/10 HCl are then added, allowing the mixture to stand a few minutes longer. This precipitates most of the protein, which is then removed by filtration. A few drops of toluene are added to the filtrate as a preservative. The urea determination is as follows: Two 5 cc. portions of urine are measured into flasks of 200-300 cc. capacity and diluted with distilled water to 100-125 cc. 2 cc. of enzyme solution are added to one flask, a few drops of toluene to each, and the solution allowed to remain well stoppered at room temperature over night. The fluid in each flask is then titrated to a distinct pink color with N/10 HCl. using methyl orange as an indicator. The amount of HCl. required for the urine and enzyme solution, less

the amount used for the urine alone and the amount (which must have been previously detained) required to similarly titrate the enzyme solution corresponds to the urea present in the urine. 1 cc. N/10 HCl. corresponds to 0.6 gm. per liter of urea in the urine. The error of the method is under 2 per cent.—*The Post-Graduate.*

Influence of X-Rays on Germination.

Drevon (*Arch. d'Elec. Med.*, July 10, 1913), finds a stimulant action on sprouting grains, with mild irradiation, especially combined with warmth. In the discussion, the question was raised whether strong rays would not have a deterrent effect in accordance with the general principle observed for other therapeutic means that a difference of dose, or strength causes opposite effects. The question was not definitely answered. (Note.—When we consider the well known application of this principle to various drugs, mechanic methods, heat, and other forms of radiant energy, it is only fair to acknowledge that there is something to the doctrine of similia similibus.)—*Buffalo Medical Journal.*

Picric Acid and Camphor Cure Ringworm.

Savill (*London Practitioner*) praises strongly Williams' formula for the treatment of ringworm, this consisting of picric acid, 7 grains, camphor ½ ounce and recified spirit ½ ounce. Dr. Savill used this mixture with gratifying success in fifty cases, of which full records were kept. She secured cures in cases which had been treated for months with other remedies without success. She says that among the nurses and mothers of the neighborhood of the Children's Hospital, where the treatment was given, she

acquired the reputation of being able to cure ringworm within three weeks. Dr. Savill makes a number of suggestions regarding technique. First, no other applications should be made; second, all the camphor in the lotion must be dissolved; third, the hair must be cut around the diseased patch in the usual way and the lotion painted on night and morning; fourth, the yellowish powder forming on the skin must be lightly washed away twice a week in order to insure fresh applications reaching the scalp; fifth, the hair should be clipped or shaved off two or three times a week, otherwise the lotion will not penetrate to the scalp; sixth, loose hairs must be removed with the epilation forceps, being careful not to break them off. Chloroform rubbed over the patch gives the diseased hairs a frosted look which makes them easy to locate.—*The Medical Fortnightly.*

Addison's Disease, Acute.

The author reports the case of a young man aged 21 years, previously always healthy, in whom a rapidly developing Addison's disease, with fatal termination in eighteen days, was witnessed. The symptoms appeared in the following order: A progressive fall in blood pressure was first noted. Then there appeared muscular weakness and evidences of some form of intoxication, including vomiting. Finally, there was observed a distinct pigmentation, localized more particularly over the genitals, axillæ and mammary areolæ. There were also diffuse and more or less extensive patches of melanoderma on the abdomen and the thorax. The mucous membranes of the cheeks, palate, and tongue were deeply pigmented. Subcutaneous injections of large doses of epinephrin were given, but no lasting effects were obtained. The autopsy revealed, in addition to a former, mild tuberculosis of the lung, complete caseation of the two adrenal glands, with marked hypertrophy of an accessory adrenal, but no change in the solar plexus.—A. Lippmann in *Medizinische Klinic.*

Cholelithiasis, Simple Method of Treating.

The author having learned that in certain localities radish juice was used with success in the treatment of cholelithiasis, tested the matter for himself in the course of twelve years, with results so conclusive as to lead him to record them for common benefit. In all cases suitable for medical treatment radish juice was given, and seven illustrative cases are described in which the use of this homely remedy was followed by complete disappearance of the attacks of hepatic colic. Either white or black radishes are used. They are ground up in a machine and the pulp thus obtained expressed through a piece of cloth. The resulting "juice" should preferably be taken fresh. The treatment may be begun either during or immediately after an attack of colic. On the first day a half-cupful is given, while later the amount is increased to a cupful and finally to 2 cupfuls. This amount is continued for two or three weeks, the dose being then gradually cut down until a half-cupful is being taken three times weekly. Most patients do not find the preparation unpleasant to take. In the majority of cases the author ordered the "cure" repeated several times during the year, even where no symptoms had been present. The *modus operandi* of the radish juice he is unable to specify, but he feels justified in recommending it as a safe and efficient remedy. —Gramme in *Medizinische Klinik*.

OBSTETRICAL

Stigmata of Decadence in Gynecology.

In considering the matter of sterility in women it is necessary to look far beyond the pelvis and to make note of influences belonging to the stage of decadence which we are now approach-

ing in this cultural period. The oak tree is not allowed by nature to grow beyond a certain height, and the human species is not allowed by nature to go beyond certain limits in development. This belongs to nature's plan, and while we may not be able to read the meaning, we may at least observe the fact.

The stigmata of decadence which come under the observation of the gynecologist may be classified under two chief heads: primary anatomic defects, belonging to hereditary entailment; and secondary anatomic defects symptomatic of reflex disturbance from peripheral irritations, and also from lack of control, hereditary or acquired, of structures which are under the guidance of the sympathetic nervous system.

The first group I will not bring forward for discussion on this occasion. It includes such definite anatomic defects as hermaphroditism, double uterus, fibro-nodosis of the oviducts, and ovaries containing few or no ova. In these cases we often find the glans clitoridis buried among adhesions, possibly signifying that nature, in the course of development of the species, is trying to dispose of the clitoris by evolution, although it is more probably an atavistic sign. The endometrium in these cases may appear to be well enough developed, so far as microscopic evidence goes, but it does not resist infection by the colon bacillus and other bacteria which prey upon the protoplasm of the cells of the endometrium, introducing one cause for sterilization. In these latter cases also, we find "one child sterility," where the uterus carries one child to term but the generative apparatus is unduly damaged at parturition and there is a tendency for no more children to be born. The endometrium in these cases sometimes fail to develop the impregnated ovum.

The second group of cases is the one to which I wish to draw attention today. The central nervous system irritated by various peripheral disturbance gives demonstration in reflex disturbances of the sensory and trophic nerves of the pelvic organs. It seems as though nature, in limiting the development of the species, strikes first at the point of vital importance—the generative organs of women. In these cases (commonly patients of neuropathic habit) we often find relaxation of peritoneal supports,

loose kidney, sagging colons, and defective ductless glands, which may make demonstration in the pelvis of women in the form of cystic degeneration of the ovary, variocele of the broad ligament, and various flexions and versions of the uterus. I have seen cases in which the ovaries had been removed for ovarian neuralgia, and yet the patient had just as much ovarian neuralgia afterward as before. In some of these cases the symptoms were relieved by correcting eye strain and balancing badly balanced eye muscles, which had precipitated symptoms referrable to distant points, including the pelvis, in susceptible patients. In other cases pelvic symptoms have been relieved by the treatment of mechanotherapists and various hygienic faddists.

In the treatment of cases of uterine flexion or version, of ovarian neuralgia, and cystic degeneration of the ovaries, we must look far away from the pelvis when beginning treatment. In the words of Herr Bebel, in the Reichstag, "Wir müssen zum Grunde gehen." I see many cases, in which fibroid degeneration of the appendix seems to irritate the pelvic ganglia in such a way as to lead to disturbances of the sexual apparatus, which has been treated at great length by gynecologists, and patients have been subjected to curetting and the introduction of various stems and pessaries interminably. The conditions calling for treatment in the female pelvis commonly belong to the stigmata of decadence, even when there are no primary anatomic defects, and the gynecologist must be a whole physician before taking up the details of work in his special field, in relation to these cases.—*New York State Journal of Medicine.*

Cancer of the Uterus.

These two articles were presented by request at the recent international medical congress. Ott is known as the apostle of extensive vaginal and Wertheim of extensive abdominal hysterectomy for cancer. The former states that while his percentage of

permanent recoveries is a little smaller than with the abdominal technic, yet the number of persons actually cured is higher than with the abdominal technic as none was damaged in any way by the vaginal operation, while the operative injuries and by-effects from the abdominal operation lead comparatively frequently to fatal complications. Ott grants that once past the breakers, a larger proportion of the individuals left are cured, but he claims that by avoiding the breakers a bigger crowd of patients start on the road to recovery, and the percentages are thus not comparable between the two groups. His total mortality in 345 vaginal hysterectomies for uterine cancer was 1.7. Of the 246 patients whose fate is known after five years, 34.1 per cent seem to be permanently cured. There is thus a proportion of seventeen permanent cures to one fatality (17 to 1). He tabulates along with his figures Wertheim's published statistics in 500 abdominal cases; the immediate mortality was 19.4 per cent; of the 180 patients whose fate is known after five years, 57.6 per cent seem to be permanently cured. The proportion of permanent cures to one fatality is, however, only as 1.7 to 1.

Wertheim's article brings his statistics down to date; abdominal operations for cancer of the cervix in 714 cases; primary mortality 18.6 per cent; the permanently cured after five years, 186 or 42.5 per cent. Among this group cured for five years are 14 patients whose lymph-nodes showed malignant involvement at the time of the operation. He had post-operative necrosis of the ureter in 6 per cent of the total 714 cases. He found only 50 per cent operable of the 1,501 cases encountered during the fifteen years since he introduced his more extensive technic.

Ott sums up his comparison of the end-results with the two methods in the statement: "With the abdominal technic one gets one and a half times more chance of permanent recovery after five years, but one runs eleven times more danger of dying during or immediately after the operation." (Ott's vaginal operation is done with special endoscopes, some of which were illustrated in *The Journal,* 1902, xxxix, 458. He does not describe his technic in this article.—*The Journ. of the Am. Med. Assn.*

Treatment of Uterine Hemorrhage.

Pfahler, in writing on this subject, concludes his paper as follows:

Roentgenotherapy is the method of choice for the control of hemorrhage in patients approaching the menopause, in whom carcinoma can be eliminated.

It is not the method of choice in patients under 40 years of age.

It can be recommended in all cases at any age in which operation is contraindicated.

For the differential diagnosis, in order to determine the indications for this treatment, special skill in gynecology is required; and for the proper administration of the rays, special training in roentgen technique. It is impossible for a gynecologist to become a roentgenologist to become a gynecologist, but it is very unlikely that either one or a roentgenologist will master both. Therefore, Pfahler believes that each case should be examined by a gynecologist, and treated by a roentgenologist.—*The Therapeutic Gazette.*

Cystic Degeneration of the Kidneys and Liver; Pregnancy.

Heinsius reported at the Obstetrical Society of Berlin an instance of a woman, aged 32, who since her first confinement, four years previously, had been under treatment for floating kidney. She became pregnant once more, and went on satisfactorily until the eighth month, when she had a sudden attack of vomiting, headache, extreme dyspnea and disturbances of vision with temporary blindness. There was a high degree of anasarca and scanty secretion of albuminous urine, but no loss of consciousness. The extremities were cold, the pulse 140. Colo-hysterotomia, anterior, was performed and the child delivered by the for-

ceps. The patient's condition at once improved. There was a tumor, like an ovarian cyst, on the right of the uterus, which was slightly taken for a cystic kidney. It diminished in size during the puerperium and the patient seemed convalescent. A few days later the tumor increased in size again and the right lower extremity became swollen; the urine contained blood and pus. Rigors set in and the integuments over the right loin became swollen, red and shiny. Infected hydronephritis, pyelonephritis and perinephritic abscess were diagnosed and the tumor was removed. It proved to be an enormous suppurating small cystic degenerated kidney. The patient died. The left kidney and the liver were found to be in a similar condition. There was hypertrophy of the left ventricle. Heinsius concluded that pregnancy was gravely compromised by the presence of bilateral small cystic degeneration of the kidneys, but the complication was fortunately rare.—*British Medical Journal.*

Duplicate Genitals with Labor.

J. E. Gemmell and A. M. Paterson describe a case with single anus and rectum, double vulva, vagina and uterus, bladder and urethra, wide separation of pubic bones and absence of umbilicus. Pregnancy and labor occurred in each uterus.—*Buffalo Med. Jour.*

Micromastia with Abundant Lactation.

Variot calls attention to the lack of relation between the size of the breasts and the functional activity. He cites a case of a woman of forty with well formed nipples but with grandular masses no larger than a silver dollar. She had nursed satisfactorily seven children.—*Buffalo Med. Jour.*

The Energy-Quotient of the Natural and Artificially Fed Baby.

The authors find that Huebner's energy-quotient of 100 calories to the kilo for a well nourished breast child during the first month of life is too low. By careful analysis of the food intake, it was found that during the first two months the energy-quotient of a breast child varied between 100 and 120 calories per kilo, being on the whole somewhat higher than the quotient determined by Heubner. On the other hand the energy-quotient of the well-nourished artificially fed child was somewhat lower, bearing out Czerny's statement that the energy needs of the child well nourished with cow's milk is not greater than the needs of the breast fed child.—*The Post-Graduate.*

Cystitis in Women, Treatment of.

The mild cases of this affection will usually clear up under plenty of water and some alkaline diuretic, such as potassium citrate, and hyoscyamus or belladonna. With these it is well to give also hexamethylenamine, in the dose of from 15 to 40 grains (1 to 2.5 gm.) daily. Absolute rest in bed with bowels kept moderately loose will hasten recovery. Hot vaginal douches during the acute stage are often comforting. If the dysuria and increased frequency are so marked as to interfere with sleep, sedatives should be given freely.

As the acute symptoms subside, irrigations and instillations are valuable. The author irrigates twice daily with a one-half saturated (2 per cent) solution of boric acid, and adds to this semi-weekly irrigations with 1:5000 silver nitrate solution, gradually increased in strength. For the instillations, 2 per cent protargol or 10 per cent argyrol are efficient. When there are isolated areas

of inflammation, direct topical application through the air cystoscope is valuable.

The condition known as cystitis colli is a mild inflammation about the internal urethral orifice and trigonum, and is probably of gonorrhœal origin. Direct applications of 10 per cent silver nitrate solution once or twice a week are valuable. They should be followed up by alkaline diuretics.

Occasionally severe cases of non-tuberculous cystitis require the formation of a vesicovaginal fistula, with continuous irrigations for several hours daily in a tub of warm water, before relief is obtained.

Tuberculosis of the bladder in women is almost *prima facie* evidence of tuberculosis of the kidney. After the renal infection has been properly treated, the bladder will tend to clear up. Irrigations of 1:5000 mercury bichloride solution, or instillations of 1:500 or greater strength; silver nitrate in weak solutions, or 10 per cent iodoform emulsion in glycerin, are helpful. Excision of ulcers, even currettage of the bladder is advisable in some cases. To these local measures should be added climatic, hygienic, and dietetic treatment, with the aid of which the prognosis can be greatly improved.—F. Webb Griffith in *Southern Medical Journal.*

Editorial

PUBLISHER'S NOTICE—The Journal is published in monthly numbers of 48 pages at $1.00 a year, to be always paid in advance.

All bills for advertisements to be paid quarterly, after the first insertion of the quarter.

Business communications, remittances by mail, either by money order, draft, or registered letter, should be addressed to the Business manager, C. S. Briggs, M. D. corner Summer and Union Streets, Nashville, Tenn.

All communications for the Journal, books for review, exchanges, etc., should be addressed to the Editor.

CLIMATICS OF HAY FEVER.

Suffering from hyperæsthetic rhinitis it may be of value to your readers to recite my experiences with climates which I have found to be the only relief of value. Northern Michigan, Mushowa Lakes and Lake of the Woods have always afforded relief. Winnipeg only partial. Montana, Idaho, Oregon and Washington have been very beneficial. British Columbia and Alaska even more so. Great Britain, France, Belgium, Holland, Norway, Sweden, Finland and Russia have granted complete peace. I was much surprised at the relief afforded by the climate of England and France. *E. S. McK.*

FLORENCE NIGHTINGALE AGAIN.

Being much interested in the life and work of Florence Nightingale I went to Scutare just across the Bosphorus from Constantinople to visit the old barracks where she had her hospital and the English cemetery hard by where are laid those whom her ministrations could not save. The old barracks looks much as it did at her time in '55 and like the pictures in the books on her life. The cemetery is on a point on the Bosphorus beside water running towards Mecca. It was chosen on account of its proximity and very open ground. Here 15-50 were buried in one grave

each morning, according to the number who had died during the past 24 hours. Only the surgeons, nurses, clergymen and officers, were given separate graves, with headstones. Here were a number of surgeons and nurses. In one instance two surgeons were buried in one grave, having died the same night.

The cemetery is beautifully kept under the care of an old Crimean veteran—Major Lyne—and his daughter. The major was but 21 in the war for the conquest of the Crimea and was nursed by Florence Nightingale in the old barracks across the way. The care of the cemetery has fallen to his daughter, who was born, bred and married, delivered and widowed in the neat cottage at the gate. She is a lovely character, her insular English softened and broadened by contact with Americans through her education at the American College for Girls at Constantinople. Just over the wall was where the Bulgarian prisoners were recently kept and where cholera was epidemic. A neat and well kept grave in this English cemetery was one of the U. S. counsel for fifteen years at Constantinople. He was born at Rochester, Minn. The day was beautiful on the Bosphorus and all seemed peace where war had so often raged. *E. S. McK.*

The governors of the New York Skin and Cancer Hospital, Second Avenue, corner 19th St., announce that Dr. L. Duncan Bulkley will give a fifteenth series of Clinical Lectures on Diseases of the Skin in the Out-Patient Hall of the hospital on Wednesday afternoon, beginning November 5, 1913, at 4:15 o'clock. The lectures will be free to the medical profession, on the presentation of their professional cards. CHAS. C. MARSHALL,
Chairman of Executive Committee.

THE SMITHSONIAN PRIZE.

On the recommendation of the Committee on the Award of the Hodgins Prize of $1,500 for the best treatise "On the Relation of Atmospheric Air to Tuberculosis," which was offered by the Smithsonian Institution in connection with the International

Congress on Tuberculosis held in Washington in 1908, the Institution announces that the prize has been equally divided between Dr. Guy Hinsdale, of Hot Springs, Virginia, for his paper on "Tuberculosis in Relation to Atmospheric Air," and Dr. Adolphus Knopf, of New York City, for his treatise "On the Relation of Atmospheric Air to Tuberculosis."

The members of the Committee on Award were:

Dr. William H. Welch, Johns Hopkins University, Baltimore, Maryland, Chairman.

Dr. Herman M. Biggs, New York City.

Prof. W. M. Davis, Cambridge, Mass.

Dr. G. Dock, Washington University Medical School, St. Louis, Missouri.

Dr. Simon Flexner, Rockefeller Institute for Medical Research, New York City.

Dr. John S. Fulton, Baltimore, Maryland.

Brig.-Gen. George M. Sternberg, U. S. A. (Retired), Washington, D. C.

CHAS. D. WALCOTT,
Secretary, Smithsonian Institution.

FORM OF DECLARATION REQUIRED OF IMPORTERS OF COCAIN.

Must File Affidavit as to Direct Imports, and Must Secure from All Persons to Whom They Sell Imports a Similar Statement as to the Use of the Coca Derivatives.

The U. S. Department of Agriculture, acting under Treasury Decision No. 33456, dated May 29, 1913, with relation to the importing and use of cocaine, cocoa, and their derivatives or preparations containing them, has prepared and has ready for issue at all of its branch laboratories and at the Bureau of Chemistry in Washington, copies of the declaration form which must be subscribed to by all importers of and dealers in these products. These blanks will be furnished free on request from importers and dealers.

The purpose of the new system of declaration is to prevent the indiscriminate and promiscuous use of cocaine, cocoa, and derivatives or preparations containing them, on the ground that these things are dangerous to the health of the people of the United States. At the same time, under this declaration entry of these drug products is permitted for legitimate use in medicine. The form of declaration, official copy of which is appended, requires the importer to declare under oath that the import is designed for use in a manner not dangerous to health, and that he will secure from each and every person, firm or corporation to whom the import is sent, the same declaration as to the use the recipient will make of that portion of the import sold or sent to him. In addition, the importer must agree to allow accredited Government inspectors to go over statements from persons to whom he has supplied the goods, and at the end of the year the importer must report to the Bureau of Chemistry the amount of these products that he has on hand on the 1st day of January in each year.

Another Victim of Wood Alcohol.

Workman Blinded by Wood Alcohol Fumes Sues Brewery.

New York City, October 27.—Gustav Kenz, the young varnisher who was made blind for life by breathing the fumes of wood alcohol varnish, which he used in the Bernheimer and Schwartz Browery to "coat" the inside of their large storage vats, will today resume his suit against the brewery in the Supreme Court of Brooklyn, to recover $10,000 damages for the loss of his sight. This suit was interrupted by the sudden death of M. E. Bernheimer, who dropped dead in the courtroom on September 25.

Immediately after Kenz became blind, his case was investigated by the New York Committee for the Prevention of Blindness, which is waging a vigorous war against wood alcohol poisoning.

"This case is a tragedy," said Miss Van Blarcom, Secretary of

the committee, and it should never have occurred. Two of Kenz's fellow-workmen were killed by these poisonous fumes while working with him in the vats. None of the poor fellows knew, when they crawled into the vats through the small manholes, that the fumes of the varnish which had been given them to use might cause their blindness or death.

"There is no excuse for the continued use of wood alcohol in varnish since denatured alcohol is cheaper and absolutely safe for all industrial purposes."

This is not the first accident of the sort which has occurred in the Bernheimer and Schwartz Brewery. A year ago one of their employes were blinded and another killed in the same manner. It is incomprehensible that in the face of this severe lesson the brewery should have been so unmindful of the welfare of its workmen as to continue using wood alcohol.

Miss Van Blarcom expressed the opinion that many brewers and the public generally do not know what deadly effects drinking or inhaling the fumes of this poison may have. The committee is therefore endeavoring to inform the public concerning the danger of swallowing or inhaling it; to urge the use of denatured alcohol in the industries; to work for a law requiring that every container of wood alcohol shall be labeled poison; and to attempt to secure legislation or a ruling which will protect workmen against the danger of inhaling the fumes of wood alcohol.

Reviews and Book Notices

Diagnosis of the Malignant Tumors of the Abdominal Viscera—By Prof. Rudolph Schmidt, Professor of Medicine in the University of Innsbruch. Authorized English Version, by Joseph Burke, Cc.D., M.D., Attending Surgeon, Buffalo Hospital of the Sisters of Charity, Consulting Surgeon, Emergency Hospital, Buffalo, N. Y. New York. Rebman Co., Herald Square Bldg., 141-145 West 36th St.

The thanks of the profession are due the enterprising publishers—Rebman Co.—for having placed within the reach of English-speaking physicians a work of such practical value as this excellent book of Professor Schmidt. Despite the universal industrious researches of the entire medical profession as to the pathological nature of cancer and its cure, the general consensus of opinion up to the present time is that the nearest cure of the dread disease is the timely use of the surgeon's knife. It is agreed that early operation and thorough eradication does cure. The main difficulty is early recognition of the presence of cancer. The work before us is a study of the diagnosis of malignant tumors of the abdominal viscera and is the outcome of the author's experience in this variety of cancer. It is a life-saving book, for if the practitioner is by it enabled to recognize the disease in time to make an operation a means of saving life, it is invaluable. The work is well arranged and carefully classified so that by its use the practitioner may be enabled to clear up many knotty points in the diagnosis of intra-abdominal cancer. The work of translation has been well done.

The Surgical Clinics of John B. Murphy, M.D., at Mercy Hospital, Chicago. Vol. II, No. 5. Octavo of 174 pages, with Illustrations. Philadelphia and London. W. B. Saunders Co., 1913. Published Bi-monthly. Price per year, paper, $8.00; cloth, $12.00. W. B. Saunders Co., Philadelphia and London.

This is a very interesting number of a very valuable publication. Among the most notable clinics we may mention the following: "Double Inguinal Hernia—Some Italian Statistics—Technic of

the Andrew's Operation;" "Cavernous' Angioma of the Thigh;" "Sarcoma of the Thymus Gland;" "Calculus of the Urinary Bladder — Suprapubic Lithotomy;" "Tumor of Femur—Cavity Filled with Moorhof Wax;" "Tumor of the Tongue—Tuberculoma." These subjects, selected from the table of contents at random, serve to show the wide range of subjects carried in the clinics of this distinguished surgeon. The reader of these clinics can receive almost as much instruction as if he were present when the lectures were delivered. We await the appearance of every new number with impatience and find the contents of every number as entertaining and interesting as a novel. We do not hesitate to advise everyone interested in up-to-date and progressive surgery to subscribe for this excellent series.

The Problem—The Autobiography of a Physician—By Charles Percy, B.Sc., M.D. *Credo quae de inferis dicuntur falsa existimas.*—Cato. The Shakespearian Press, 114-116 East 28th St., New York. 1913.

This is a book that should prove of startling interest to its readers. It is a probing into the problem of life from a scientific standpoint. It is a book that is without the beaten paths of scientific literature and the author in a most charming and attractive style carriès his readers into the mazes of research as to problems of life and the theories regarding it. He begins with investigation of sleep and gives interesting examples of somnambulism. His culminating experiment is in the instance of a newly drowned man whom he failed to resuscitate, in whom he introduces an artificial heart and brings life into the head. It is a weird and yet instructive little book, as its scientific discussions are all accurate and up-to-date. We have read the book with the greatest interest.

Publisher's Department

A Familiar Form of Cystitis.

There is a form of cystitis quite familiar to the general practitioner. It occurs in females, old and young, with apparently normal pelvic organs, generally after a chilling. There is an abrupt onset with frequent micturition, tenesmus and perhaps dysuria. The acid urine contains the infecting organism, usually a colon bacillus, pus, and often blood. Rest in bed, local warmth, light diet, free catharsis and sanmetto are the measures employed, and in a few days the severity of the attack subsides, and generally in two or three weeks the patients are well as ever.

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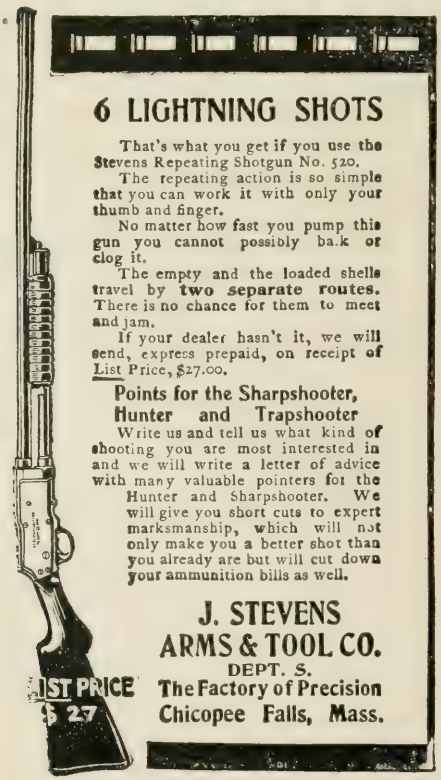

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